of the classic symptoms of Recklinghausen's disease, the cutaneous tumors and the double pigmentation of the skin.

8. *Alteration in the Spinal Ganglia in Tabes.*—The problem which concerns itself with the origin of the tabetic process is still one of the most debatable questions in neuropathology. Whether it is to be found in the cord, in the roots or in the posterior root ganglion, is still a matter for the future to solve. These two authors in 1902 examined a large number of spinal ganglia from tabetic cases and collected the findings of other workers in the literature, but were unable to come to any definite conclusion in the matter. They did determine a certain number of very slight alterations in the structure of the cells and it is for the purpose of studying these with more careful and finer technique that the present investigation was undertaken. The sections were all embedded in paraffin. Each ganglion was cut longitudinally so that the complete surface of the specimen could be studied in each section. The Nissl stain was not used because, according to the opinion of the authors, it does not produce the finer effects of stain reaction which are needed in ganglion work. The method used was staining en masse in picrocarmin after the previous treatment in osmic acid. By this method the fibers of the posterior roots can be studied and the myelin as well as the nuclear changes are well brought out and also the chromatin of the cell. The osmic acid stains also the fatty degeneration found at times in the cell itself. The ganglia from eight cases of tabes formed the material of the study. In general the most striking thing observed was the diminution in the number of the cells and the atrophy of the cells themselves. There was some change observed in the blood vessels, some hyaline degeneration. In the ganglia which were most affected it can be said that the number of normal cells was always in excess of the abnormal ones. The following conclusions are noted by the authors: (1) There exist in tabes frequent alterations in the structure of the cells in the posterior root ganglia. These lesions consist principally of a slight degree of atrophy and of disintegration which can go as far as the destruction of the cells. (2) In spite of the importance and their frequence it is difficult to appreciate the rôle they play in the pathogenesis of the atrophy of the posterior roots, and of the cord degeneration. They are too frequent, however, and too marked, in certain cases, not to be considered as playing some important rôle in the pathogenesis of tabes and as not taking part in the tabetic process.

9. *Traumatic Hematomyelia.*—Traumatic hematomyelias may be considered in the light of a physiological experiment on account of the rapidity of their onset, the exactness of their localization, and the simplicity of their mechanism. A man twenty years old, fell, fracturing the two processes of the fifth cervical by direct blow upon the spinous processes. At the autopsy it was found that the hematomyelia extended from the second to the sixth cervical segments. An interesting point in this case was the rapid appearance of cellular lesions. Twenty-one hours after the accident the cells not only at the seat of the lesion but also in the segments some centimeters distant showed all degrees of degeneration.

SIDNEY I. SCHWAB (St. Louis).

JOURNAL DE NEUROLOGIE

(1904, IX, Nos. 4 and 5.)

1. Experimental Rabies from Fixed Virus, and Its Histological Lesions. CHARLES LADAME.

1. *Experimental Rabies from Fixed Virus.*—The author briefly reviews the history of the pathological anatomy of rabies, then gives an account of his own researches, which consisted in injecting a number of rabbits with fixed virus prepared by triturating with sterile water the spinal cord of a rabbit of the five hundred and fifty-eighth passage. His injections were made by the intra-cerebral sub-dural, and nasal methods. Besides the

virus alone (in 28 cases), he also used virus mixed with bile from a rabbit (in one case), the pathological bile alone (in two cases), and normal bile (in two cases). Upon examination of the nervous systems of these animals, he found the usual lesions of membranes, cells and vessels, with cellular deposits in the bulb and elsewhere for which he prefers the name of nodules to that of tubercles. The cell deposit and proliferation found in the ganglia of the cerebro-spinal nerves, he regards as entirely similar to the rabic tubercle or nodule. The cells making up these nodules and infiltrations he finds to be of five sorts, lymphocytes, leucocytes, connective tissue cells, neuroglia cells and endothelium of the cell capsules. The distribution of the various lesions and their intensity varied greatly. Similar changes were found in all the animals, not excepting those injected with normal bile alone. In a cat, in which the vagus nerve had been cut, nodules were found in its ganglion, to no extent differing from those observed in rabies. The cure in certain paralyses, regeneration being favored by the stimulus of lesions found in the nervous system in experimental rabies are the common and habitual lesions of inflammation. 3. The rabic nodule found in the ganglia is a particular manifestation of inflammation due to the special structure of this organ. It is found in other diseases than rabies. 4. Neither the localization nor the intensity of the lesions in laboratory rabies justifies a postmortem diagnosis of rabies. 5. The pathological anatomy of rabies from fixed virus is the ensemble of all the lesions, both interstitial and parenchymatous, found in the nervous system. 6. The mode of introduction of the fixed virus seems to bear no relation to the intensity or localization of the lesions. 7. In injection by the nasal mucous membrane the olfactory bulb on the corresponding side is more affected than that on the other side. 8. Where the animal is suddenly overwhelmed by the poison the lesions may be of minimum intensity. 9. The variability of intensity of the lesions is to be attributed in large part to the individual resistance of the animal.

(1904, IX., No. 6)

1. Some Practical Deductions from the Refutation of the Neurone Theory. Dr. Debray.

1. *Refutation of the Neurone Theory.*—Apart from the anatomical relations described by Dogiel, Apathy and Bethe, the author thinks the following furnish strong arguments against the validity of the neurone theory: We know that when a nerve is cut there is degeneration, not only of its peripheral end but also of its central end and of its cell of origin (retrograde or Nissl degeneration). Also regeneration of the peripheral end has been found possible. Lastly, in amyelic monsters there are nerves, normal in structure and function. Taking it all in all he regards this theory as no longer tenable. Is it a misfortune to have to give it up? He thinks not, being even of the opinion that by rejecting it we are better able to explain certain facts with regard to regeneration and recovery of function of cells, our prognoses, indeed, taking on a more hopeful aspect. If instead of the axone arising by direct budding from a nerve cell, and supplying a definite muscle fiber, gland cell or what not, it is made up from fibrils coming from a nerve net in and around a cell, the constituents of which nerve net may have connections with a number of other cells, nerve impulses would not be dependent upon one cell, but in the event of the injury of this directly connected cell, the more distant ones could take up its task, and by their influence and help the injured cell may have a chance to recover, or if irreparably damaged its partners may be eventually educated to perform its work. Hence the possibility of massage, electricity, etc. The fact that when a cranial nerve is cut, the rabies from fixed virus does not produce lesions. 2. The vascular and cell author thinks the following conclusions are justified: 1. Experimental

cells of its nuclei are capable of regeneration, while when it is torn out such is not the case, he thinks strongly supports this view, since in the latter instance the breaking up of connections is too widespread to admit of repair. The continuity of the nerve fibrils peripherally, he thinks, throws light upon the process of repair in nerves, since by reflexes from the periphery coming around through other nerve tracts the growth of the neuroblasts from the central end may be stimulated.

(1904, IX., No. 7.)

1. The Solar Syndrome in Spinal Cord Tumor and the Condition of the Lumbo-sacral Cord, Fifty-four Years After Amputation of the leg. De Buck.
2. Note on Litigous Lunatics. A. Giraud.

1. *Solar Syndrome in Spinal Cord Tumor.*—A lunatic, sixty-five years old, was taken with chronic vomiting, later with diarrhea, and after five months died in marasmus. The gastro-intestinal tract beyond great congestion showed nothing abnormal, but in the spinal cord there was found a glioma about 2-3 mm. in diameter, occupying the right postero-lateral region from the tenth dorsal to the second lumbar segment. The anterior horns, the columns of Clarke, and the zone of entrance of the posterior roots were not affected. The author thinks this accounts for the gastro-intestinal symptoms, which he calls "the solar syndrome," and locates the origin of the abdominal sympathetic, which agrees closely with the findings of other authors. Its fibers seem to leave the cord in the dorsal roots from the sixth to eighth dorsal to the second lumbar, while its centers are higher up in the upper dorsal, and even in the lower cervical segments, in the lateral group of cells, avoiding the anterior horn and the column of Clarke. The same patient, when eleven years old, had his left leg amputated at the middle of the thigh. Careful study of the lumbo-sacral cord showed that the cells in the leg and foot nuclei were all present, but they showed some swelling, slight chromatolysis and ectopia of the nucleus, "reaction at distance."

2. *Litigous Lunatics.*—Note on two cases probably of paranoia querulans, bringing out nothing unusual.

(1904, IX., No. 8.)

1. Experimental Solar Syndromes. Laignel-Lavastine.
2. Autogenic Regeneration in Man and the Neurone Theory. G. Durante.
3. Eunuchoid Voice in Hemiplegia. J. Grasset.
4. A New Mandrin for the Esophageal Tube to Facilitate Forced Feeding. Serrigny.

1. *Experimental Solar Syndromes.*—The complete ablation of the solar plexus of the dog is a very grave operation. One-half of the animals die within the first twenty-four hours, most of the rest succomb to collapse in four or five days, while a few recover. The symptoms produced by this ablation constitute the paralytic solar syndrome. They may be hyperacute, acute, subacute and chronic. Besides these the author recognizes symptoms due to irritation of the plexus, and in the neighboring organs symptoms of irradiation. The hyperacute paralytic symptoms consist in sudden fall of arterial tension, shown by rapidity and smallness of the pulse, cold extremities, vomiting, bloody diarrhea, anemia and collapse. The acute form is marked by similar symptoms less marked in degree, scanty and dark urine, rich in biliary pigments and indican, and frequently in leucine and tyrosin, seldom in albumin, sugar or acetone. When death occurs there is found intense congestion of all the abdominal viscera except the kidneys, but no peritonitis. The subacute and chronic forms differ only in degree from the above, and are capable of recovery. The

author has kept some dogs deprived of solar plexus for eighteen months, and one female during this time gave birth to three healthy puppies without trouble. With the symptoms noted above the splanchnic nerves seem to have nothing to do, for their resection produces nothing similar. The symptoms of irritation of the plexus (produced by pinching or stroking) consist of intense epigastric pain, constipation and rises of arterial tension. Applying the results observed to human pathology the author thinks that solar symptoms are very evident in certain cases of peritonitis, those of the acute paralytic form occurring in pneumococcic peritonitis, while symptoms of excitation are observed in chronic tubercular peritonitis at the start, giving place later to paralytic symptoms. In saturnine intoxication an example of alternate excitation and paralysis is furnished, while in mucomembranous colitis the picture strongly suggests solar paralysis.

2. *Autogenic Regeneration in Man and the Neurone Theory.*—In a woman in whom the median nerve had been resected from the palm to the upper third of the forearm for a neuroma at the wrist, the author found on autopsy, five years later, that though the ends of the nerve were separated by more than 20 cm., upon each of them there had developed a voluminous amputation neuroma. Microscopical examination of the tumor at the peripheral end showed undoubted nerve fibers, with distinct axis cylinder, and a sheath, which though not staining well by Pal, seemed to be of the nature of myeline. Other fibers more embryonic were represented by fusiform cells or bands of protoplasm, enclosing axis cylinders. The nature of these tubes seemed to preclude the possibility of their having grown in from other nerve trunks. The author thinks that this case strongly supports the results of experimental evidence that the nerves are developed in segments from structures previously existing along their tracks, and are not of necessity outgrowths from centrally located nerve cells. Hence it must be added to the array of facts which militate against the neurone theory. Reviewing some of these he concludes that it is time for us to modify our views, to discard our former conception of the neurone theory as a garment, which, having served its turn, has grown too narrow.

3. *Eunuchoid Voice in Hemiplegia.*—In a woman seventy years old, with a left hemiplegia, the voice had taken on a peculiar high pitch not present prior to the stroke. From the study of the case the author decided that the eunuchoid voice was due to a paralysis of the crico-thyroid muscle, by which the cricoid cartilage not being held firm, the thyroarytenoids could tighten the vocal cords only after they were much shortened. This was shown by the fact that when the cricoid cartilage was steadied by the hand the low notes were possible. Again, when the crico-thyroid muscle was faradized the pitch of the voice was temporarily lowered.

4. *Mandrin for the Esophageal Tube.*—The author uses a flexible mandrin made of fine steel wire twisted into a spiral. Another steel wire with bulbous ends is arranged to fit inside of the coils of the spiral when still greater rigidity is required.

(1904, IX., No. 9.)

1. Janet's Psycholepsy and the Störch-Foerster Theory. De Buck.
2. Sensory Disturbances in Neurasthenic and Melancholic Conditions. Dubois.
3. Surgical Treatment of Defective Speech Due to Anatomical Defect in an Epileptic Imbecile. F. Larrivé.

1. *Janet's Psycholepsy and the Störch-Foerster Theory.*—To Janet, psycholepsy and psychesthenia represent two conditions, the one acute

the other chronic, depending upon the fall of what he calls the psychological tension of the psychological potential and of the mental level. Since the functions and acts most related to the present, and to objective reality depend upon the highest psychological tension, these functions and acts are the first to suffer in psycholepsy and psychesthenia, and there is produced in the patients a sense of incompleteness and of depersonalization. He considers the various obsessions and phobias as a secondary effect of this depersonalization, etc. As illustrating his views, Janet cites two cases of epileptics in whom there occurred as an epileptic equivalent a peculiar misty condition, in which, though the patient could see, hear, etc., there existed an insurmountable doubt as to the validity of things seen and heard. Turning from the views of Janet, the author takes up the theory of Wernicke, Störch and Foerster, according to which each perception consists of two elements, the one purely sensorial, the other represented by the parallel organic sensations from the organ or part of the body specially acted upon by the sensorial excitant. These parallel sensations consist chiefly in the perception of the muscular activity constituting the movements, which adapting the sensorial apparatus to the peripheral irritant, are intended to produce the most favorable conditions for perception. To these organic parallel sensations we owe our consciousness of our own personality and its relation to the outside world. If then we entitle the ensemble of organic sensations from muscles and viscera, which constitute the corporeal personality, the "somatopsyche," the sensations coming from without make up our knowledge of the outside world, the "allopsyche." Hence Wernicke's division of "somatopsychoses" and "allopsychoses," according to whether the patient's perceptions of self, or those of the outside world as related to himself are chiefly disturbed. The author thinks that one of the cases of Janet may be better explained according to this latter view, as instances of disturbance of the somatopsyche in the visual sphere. He next refers to a case described by Foerster as an instance of "a function of the somatopsyche." This case was that of a woman forty-nine years old, who had a sensation of emptiness in the head, and seemed to have lost all bodily sensation, as well as power to recognize persons and things, and who, incapable of any exertion, became a prey to mental anguish and sought relief through suicide. As the author remarks, such conditions of doubt as to the reality of anything are by no means uncommon among the insane. In the explanation of such conditions he thinks the views of Wernicke, Störch and Foerster more rational than those of Janet. That the psycholepsy theory of Janet is entirely false, however, he does not believe. On the contrary it contains a certain amount of truth, and his notion of the lowering of the psychological tension is not incompatible with out anatomical ideas. If there is a perceptive reality there is above it an apperceptive reality, a higher function, and this is what is diminished or disturbed in what Janet calls the "social aboulics." In the function of apperception association plays the most important part, and the nearest to an anatomical explanation of the phenomena under discussion that the author ventures, is to suggest that they may be due to troubles of the association fibers or cells, a view to which Wernicke gives prominence in his text book.

2. *Sensory Disturbances in Neurasthenic and Melancholic Conditions.*—A warning against attributing too great importance to slight sensory and motor disturbances, as pointing to a diagnosis of general paresis, when they are found in persons of middle age showing neurasthenic or melancholic symptoms, with notes on three illustrative cases.

3. *Surgical Treatment of Defective Speech.*—Operation for tie-tongue in a case of an epileptic imbecile, under medico-pedagogical treatment up to that time and unable to pronounce properly. After the operation, under systematic exercises, great improvement occurred.

(1904, IX., No. 10.)

1. The Ampliation of the Lateral Ventricles in Mental Diseases. L. MARCHAND.

1. *Ampliation of the Lateral Ventricles.*—This article is not suitable for abstraction, on account of the tabular matter of which it is largely composed.

(1904, IX., No. 11.)

1. Organization of a Service in Mental Medicine in Prisons. E. MASOIN.

1. *Mental Medical Service in Prisons.*—An outline of the method of organization of a service for the examination of criminals suspected of being insane or defective, established in the Belgian prisons since 1892. Among the facts of interest noted by the author are that figures show an apparently steady increase in the frequency of insanity in Belgium. Among prisoners it is much more prevalent than among the general population, the figures (prior to 1890) being 0.156 per cent. for the general public, 1.1 per cent. for prisoners. The author has not found any special form of prisoners' insanity, but has been struck by two facts, first, the frequency among prisoners of insanities with auditory hallucinations, and second, the infrequency of general paresis. Attempting to account for the latter circumstance, he gives figures as to syphilis, etc., but in the end can find no explanation other than that since most of the prisoners are already in confinement by the age of thirty, through the regular life of the prison, they are at the usual age for general paresis preserved from the stress, both mental and physical, which seems to play so important a rôle in the production of this disease.

(1904, IX., No. 12.)

1. The Functional Duality of Muscle. MLLE. I. IOTEYKO.

1. *Functional Duality of Muscle.*—As long ago as 1858 Schiff showed that there were two elements in the muscular contraction, the one quick and of short duration, produced by faradic irritation of the nerves supplying the muscle, the other slow to start and lasting for a longer time, set up by mechanical irritation of the muscle direct, and seen usually immediately after death, when the nerve had already lost its irritability. The first he called the neuro-muscular, the second the idio-muscular contraction. Disputed for many years, his views have of late been strikingly confirmed. A number of authors studying the effects of different drugs upon muscle found that in veratrinized muscle the quick, short contraction was lost, all stimuli, electrical, mechanical and chemical producing a contraction of a more lasting character. It remained for Botazzi, however, to explain the two kinds of contraction, by assuming the presence in muscular fibers of two kinds of elements, an "anisotropic fibrillary" element, and a protoplasmic element, the "sarcoplasm;" the first contracting rapidly and immediately relaxing, the second of slow, but more lasting contractility. The authoress's studies upon veratrinized muscle showed that under the influence of this drug the muscular contraction was resolved into its elements, two separate waves being observed, the first short, the "anisotropic" contraction, the second slower and longer, the "sarcoplastic" contraction. Hence it seems probable that the difference in character of the contractions of different muscles depends upon the relative proportions of the anisotropic and sarcoplastic elements which they contain. In the pale striated voluntary muscles the former element predominates, while the smooth muscles contain mainly the sarcoplasm. The anisotropic fibers are acted upon by the faradic current, while the sarcoplasm, responding only to a stimulus acting for an appreciable time, requires the continued current, or a mechanical or chemical irritant. Drawing practical conclusions the authoress thinks that reaction of degeneration is explained by

the fact that in a degenerated muscle the anisotropic elements tends to disappear, the muscle fibers taking on the more embryonic form, the sarcoplasm. Hence the usually predominant anisotropic reaction is lost while that characteristic of the sarcoplasm, no reaction to faradism, slow contraction to galvanism, and greater reaction to the anode than to the cathode, occurs. A proof of this she has obtained by subjecting degenerated muscles to the action of certain drugs, as ammonia, chloroform and saline solutions, under the influence of which the lost faradic irritability could be made to return. The sarcoplastic contraction, while persistent, may be considered as economical, as it does not seem to be accompanied by much fatigue or by increase of temperature. In hysterical and cataleptic contractions the authoress finds the characteristics of sarcoplastic contraction. The above gives only an outline of this interesting paper, which should be consulted in the original by those specially interested.

(1904, IX., Nos. 13 and 14.)

1. Predisposition in the Etiology of Mental Disease. E. MARANDON DE MONTYEL.

1. *Predisposition in the Etiology of Mental Disease.*—In the etiology of mental disease predisposition plays a most important rôle. Without it insanity is very unlikely to develop, even when the exciting causes are in full play. The author during an experience of thirty years has paid great attention to this subject, and here formulates his conclusions. Predisposition to mental disease he finds congenital and acquired. Congenital predisposition occurs in three ways, by direct heredity of a neuropathic constitution, through the fecundating congress, and through the state of the mother during pregnancy. Under the first head the author can only find neuropathy, consanguinity and tuberculosis to be active in the parents. The condition of the parents at the moment of conception has long been recognized as capable of influencing the mental make-up of the offspring. As factors here he finds accidental inebriety, alcoholism, saturnism, tuberculosis, malarial infection and advanced age. As influences affecting the mother during pregnancy, which may give rise to predisposition to insanity, even when the parents are free from such tendency, he finds lively emotions, especially when sudden and terrifying, alcohol, lead, malaria, tuberculosis, abdominal trauma, hard work—especially when necessitating maintenance of a bent position—infectious diseases—especially typhoid fever and the beginning of an abortion, even when non-traumatic. The question as to whether a person born free from predisposition can acquire insanity he answers in the affirmative. The following six causes he finds alone capable of causing such predisposition, and they acting only upon the sound brain cannot immediately produce insanity. These form three groups, an infectious one with typhoid fever and malaria, a toxic group with chronic alcoholism and saturnism, and a physical group with cranial trauma and insolation. Febrile and infectious delirium may be seen in any one predisposed or not, but its characters differ in the two cases, the predisposed showing special tendency to hallucinations and illusions. Tuberculosis, while capable of causing predisposition in the child, when present in the parent, he finds incapable alone of producing insanity in a person previously indisposed to it. The author by no means underestimates the importance of exciting causes, but affirms that even when predisposition is present, without exciting cause, there will be no psychosis. But while predisposition alone may be incapable of producing a true psychosis, it nevertheless leaves its impress upon the character of the individual, and the degenerate is the result. The two fundamental characters of this unfortunate, are insufficiency and disequilibration, which gives the coloring, be it ever so variable, through the whole scale, from the idiot upward. Some one or more faculties may be decidedly above the normal, and the

author indeed thinks that many of the great ones of the earth have belonged to this class, for normal persons do things in an average way only, and without those of abnormal or one-sided development few great things would be accomplished. As to the respective types of mental disease, due to congenital and to acquired predisposition, the former he thinks especially produces the psychoses, having little tendency to dementia, such as periodic insanity and paranoia, while in acquired predisposition he has only found the manias, melancholias and confusion. ALLEN (Trenton.)

ARCHIVES DE NEUROLOGIE

(Vol. XVII., 1904, No. 98, February.)

1. Epilepsy: Pathogeny and Therapeutic Indications. ALEXANDRE PARIS.
2. A New Case of General Conjugal Paralysis. A. CULLERRE.
3. Latest Conceptions in Hypnotism and Hysteria. A. CHARPENTIER.

1. *Epilepsy.*—The studies of this author have led him to the conclusion that certain infectious diseases, such as typhoid fever, have a suspensive effect upon epilepsy, and he attributes this to a neutralization or destruction of toxins by other toxins of different origin, which should be associated with the product of secretion. He illustrates this point by citing the case of an epileptic mute who was able to talk during the course of an attack of typhoid fever, but relapsed into his former state after convalescence was established. He has also observed the infrequency of goitre among epileptics, even in those regions where goitre is very prevalent. There would seem to be a marked antithesis between cretinism and epilepsy, as the former is always established before puberty, and the physical and intellectual development of the individual afflicted ceases at that period, while epilepsy, on the contrary, most often makes its first appearance at that age, when the bodily and mental powers receive a new impulse, the glands of internal secretion and the genital organs acquiring a relatively intense functional activity. What we know of the development of certain glands in the cretin—such as the thyroid body, ovaries or testicles—and the connection which exists between them and intellectual development, the genesic stimulation, and the insufficiency of those glands, gives us ground for attributing that special stimulation which appears at puberty to an increase of functional activity of the thyroid corpus, of the ovaries and the testicles. It is an absolutely logical deduction and of the greatest importance, for it will aid us to assign their proper importance to the thyroid body and genital glands in the pathogeny and evolution of epilepsy. The marked antithesis between cretinism and epilepsy may be observed in the behavior of the subjects, the cretin being harmless, apathic and inert, while the epileptic is only too often a most dangerous member of society. From this we might be led to conclude that the causes of the two conditions are diametrically opposed. A summary of the third subdivision is in part: Epilepsy is less grave in goitrous subjects; aggravation of epilepsy by the ingestion of fresh thyroid corpus or of thyroidine; connection of epilepsy with the principal phases of genital life in woman, puberty, menstruation and the menopause; secondary influence of the genital glands in the pathogeny of epilepsy. It has been repeatedly observed that epilepsy develops less and less from middle age to the critical age, and it seems then very certain that a rôle ought to be attributed to the evolution of the glands of the genital organs in the pathogeny of epilepsy. (To be continued.)

2. *General Conjugal Paralysis.*—The report of the case of a widow, fifty years old, whose husband had died two and one-half years before of cerebral attacks. Her symptoms were maniacal agitation, marked loquacity, erotism, satisfaction, etc. Her husband had been a lighthouse keeper, of regular habits, no alcoholism nor syphilis as far as could be learned. The patient had been three times pregnant, but had always miscarried. The